



Natural Heritage

See You in the Spring

South Dakota's Migratory Bats

By Silka Kempema



Hoary bat (*Lasiurus cinereus*).
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Animal migration has fascinated humans for centuries. We have marveled at the distances traveled, energy use, and navigational skills of these seasonal travelers. The ability to fly allows animals to migrate seasonally to find breeding or feeding grounds or favorable climatic conditions. Migration is most developed in birds. However, large mammals, such as elk, caribou, and the gray whale also migrate. Elk exhibit altitudinal migration moving up from lower elevations in the winter in search of food found at higher elevations in the summer. Caribou herds make regular seasonal migrations in Canada from winter ranges in the southern provinces to summer ranges in northern Canadian territories. Gray whales travel long distances (latitudinal migration) from cold arctic summer feeding waters to winter breeding areas off the California coast.

So, if there were mammals that could truly fly, I bet they could migrate; there are and they do! In South Dakota, there are three species of bats that migrate. The eastern red bat (*Lasiurus borealis*), hoary bat (*Lasiurus cinereus*), and silver-haired bat (*Lasiurus noctivagans*) migrate to and from South Dakota each year. In addition to being migratory, these species roost in trees, which helps explain their need to migrate. Migratory tree-roosting bats spend the day literally hanging out in trees, generally not in caves or mines like some of South Dakota's other bat species. These migratory tree-roosting bats are also different in that two of the three tree-roosting species are solitary, spending most of their time alone or with their offspring.

Bats migrate for some of the same reasons that other animals migrate. For a small mammal that often roosts alone in a tree, it simply gets too cold

in the winter. This seasonal drop in temperature also removes available prey: flying insects. The major ecological role of migratory tree bat species is simple and similar to the overwhelming majority of other bat species in North America; they eat insects.

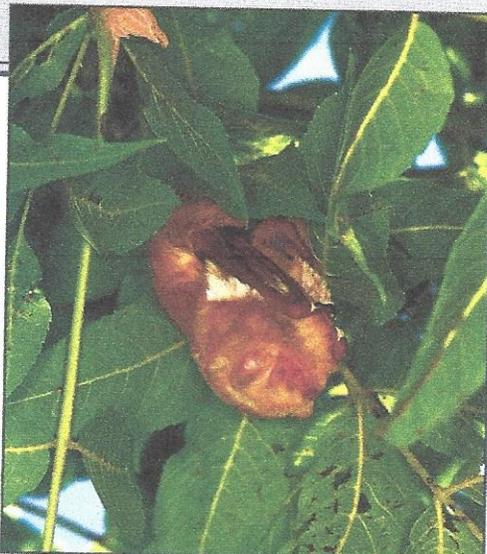
Much remains unknown about bat migration, but there are some similarities to bird migration. Bats, like birds, generally leave in late summer or early fall and return in the spring. Bats also need to rest during migration. Groups of bats may use migratory roosts, and the same roost may be used by different individuals or groups on subsequent days during migration. Although bats are creatures of the night, migratory tree-roosting bats have been documented to move in mixed-species groups during the day. In the late 1800's, great flocks of eastern red bats were observed throughout the

day in New York's Hudson Highlands. A report of day-time flights by hoary bats was published in 1961.

Where do migratory tree-roosting bats go during the winter? This group of species has been difficult to study, but there are a few good ideas. These bat species seek out areas with temperatures that remain above freezing and that have insects throughout the winter. Areas below 40°N latitude (such as Denver, Colorado) and coastal areas generally meet these criteria. For example, a silver-haired bat banded near Whitewood, South Dakota was found on its way south near Denver. If temperatures in these areas drop below freezing, these bat species compensate by entering into short bouts of torpor with reduced body temperature and metabolic rates. In general, migratory tree-roosting bats that summer in South Dakota probably go to the southern U.S. states or Mexico.

Now for the exceptions; some tree-roosting bats live in areas with temperatures that remain above freezing and have available prey year-round. These areas are typically below 34°N latitude. Los Angeles, California is at approximately this latitude. Bats in these areas do not need to migrate.

The eastern red bat (hereafter red bat) is found throughout South Dakota and is closely associated with woodlands near water. Males are orange to yellow-orange and females are a buff-chestnut color. Red bats roost by hanging from one foot attached to a leaf stem, twig, or branch. Roosting sites have dense foliage above but are open below and can range from four to 40 feet aboveground. A roosting red bat may resemble a dead leaf. This species is unique among bat species because a



Eastern red bat (*Lasiurus borealis*). © Doug Backlund, Wild Photos Photography, www.wildphotosphotography.com

female bears as many as five pups or young. Giving birth only once a year, most bat species only have one or two pups. Although associated with trees and water, you may find this species out on the treeless plains during migration. Few specifics are known about timing of red bat migration in South Dakota, but red bats tend to migrate north in April and leave the state during August or early September.

The hoary bat also occurs throughout the state, using both coniferous and deciduous trees near open areas and close to water. The common and scientific names describe the silvery to white-frosted fur. The hoary bat also roosts from tree branches with dense foliage, but generally at only ten to 15 feet above ground. This is the largest of the three migratory tree-roosting bats in South Dakota (approximately 5-6 inches long) and is the largest of all known bat species in the state. Its 16-inch wingspread makes it a strong flyer. As with migratory birds, individuals may be found in places not typical for the species. Hoary bats leave South Dakota in late summer and return in April and May. In spring, female hoary bats precede the males in migration.

The silver-haired bat is found statewide, inhabiting both coniferous forests and wooded streams. This blackish-brown bat has silver tipped fur which is most noticeable on its back. Individuals roost under loose bark and in tree hollows when available, but may also roost in piles of fence posts, boards, or bricks on the treeless plains, especially during migration. Winter roosts include mines, caves, and outbuildings. Slow and leisurely flight patterns are characteristic of this species. Silver-haired bats tend to leave South Dakota in late summer and early autumn, returning in late spring. Females may winter farther south than the males.

Similar to our feathered friends, bats can and do migrate for many of the same reasons. So when spring comes around next year, keep watch for not only birds, but the return of migratory tree-roosting bats! 🦇



Silver-haired bat (*Lasiycteris noctivagans*). © Merlin D. Tuttle, Bat Conservation International, www.batcon.org